

**Unmatched Case-Control Study (Comparison of ILL and NOT ILL)  
Sample Sizes for 95.00 % Exposure in NOT ILL Group**

Conf.	Power	NOT ILL : ILL	Exposure in ILL	Odds Ratio	Sample Size NOT ILL	Sample Size ILL	Total
95.00 %	80.00 %	3:1	96.11 %	<u>1.30</u>	11,448	3,816	15,264
90.00 %	"	"			9,054	3,018	12,072
95.00 %	"	"			11,448	3,816	15,264
99.00 %	"	"			16,968	5,656	22,624
99.90 %	"	"			24,762	8,254	33,016
95.00 %	80.00 %	"			11,448	3,816	15,264
"	90.00 %	"			15,039	5,013	20,052
"	95.00 %	"			18,384	6,128	24,512
"	99.00 %	"			25,581	8,527	34,108
"	80.00 %	1:1			5,600	5,600	11,200
"	"	2:1			8,526	4,263	12,789
"	"	3:1			11,448	3,816	15,264
"	"	4:1			14,368	3,592	17,960
"	"	5:1			17,290	3,458	20,748
"	"	6:1			20,208	3,368	23,576

Formula :  $m' = \frac{\text{Sq}\{c(a/2) * \text{Sqrt}[(r+1) * PQ] - c(1-b) * \text{Sqrt}[r * P1Q1 + P2Q2]\}}{(r * \text{Sq}[P2 - P1])}$   
 $m = .25m' * \text{Sq}\{1 + \text{Sqrt}[1 + 2 * (r+1) / (m' * r * \text{Abs}[P2 - P1])]\}$

Reference : Fleiss, "Statistical Methods for Rates and Proportions",  
2nd Ed., Wiley, 1981, pp. 38-45.

**Unmatched Case-Control Study (Comparison of ILL and NOT ILL)  
Sample Sizes for 90.00 % Exposure in NOT ILL Group.**

Conf.	Power	NOT ILL :ILL	Exposure in ILL	Odds Ratio	Sample Size NOT ILL	Sample Size ILL	Total
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95.00 %	80.00 %	3:1	92.13 %	1.30	5,955	1,985	7,940
90.00 %	"	"			4,710	1,570	6,280
95.00 %	"	"			5,955	1,985	7,940
99.00 %	"	"			8,817	2,939	11,756
99.90 %	"	"			12,864	4,288	17,152
95.00 %	80.00 %	"			5,955	1,985	7,940
"	90.00 %	"			7,830	2,610	10,440
"	95.00 %	"			9,576	3,192	12,768
"	99.00 %	"			13,338	4,446	17,784
"	80.00 %	1:1			2,919	2,919	5,838
"	"	2:1			4,436	2,218	6,654
"	"	3:1			5,955	1,985	7,940
"	"	4:1			7,468	1,867	9,335
"	"	5:1			8,985	1,797	10,782
"	"	6:1			10,500	1,750	12,250

Formula :  $m' = \frac{\text{Sq}\{c(a/2) * \text{Sqrt}[(r+1) * PQ] - c(1-b) * \text{Sqrt}[r * P1Q1 + P2Q2]\}}{r * \text{Sq}[P2 - P1]}$   
 $m = .25m' * \text{Sq}\{1 + \text{Sqrt}[1 + 2 * (r+1) / (m' * r * \text{Abs}[P2 - P1])]\}$

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-----	-----	-----	-----	-----	-----	---	-----
95.00 %	80.00 %	3:1	95.62 %	1.15	37,155	12,385	49,540
90.00 %	"	"			29,331	9,777	39,108
95.00 %	"	"			37,155	12,385	49,540
99.00 %	"	"			55,158	18,386	73,544
99.90 %	"	"			80,562	26,854	107,416
95.00 %	80.00 %	"			37,155	12,385	49,540
"	90.00 %	"			49,230	16,410	65,640
"	95.00 %	"			60,501	20,167	80,668
"	99.00 %	"			84,813	28,271	113,084
"	80.00 %	1:1			18,354	18,354	36,708
"	"	2:1			27,756	13,878	41,634
"	"	3:1			37,155	12,385	49,540
"	"	4:1			46,552	11,638	58,190
"	"	5:1			55,950	11,190	67,140
"	"	6:1			65,346	10,891	76,237

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 $m = .25m' * \text{Sq}\{1 + \text{Sqrt}[1 + 2 * (r+1) / (m' * r * \text{Abs}[P2 - P1])]\}$

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-----	-----	-----	-----	-----	NOT ILL	ILL	-----
95.00 %	80.00 %	3:1	91.19 %	<u>1.15</u>	19,452	6,484	25,936
90.00 %	"	"			15,360	5,120	20,480
95.00 %	"	"			19,452	6,484	25,936
99.00 %	"	"			28,866	9,622	38,488
99.90 %	"	"			42,150	14,050	56,200
95.00 %	80.00 %	"			19,452	6,484	25,936
"	90.00 %	"			25,788	8,596	34,384
"	95.00 %	"			31,704	10,568	42,272
"	99.00 %	"			44,469	14,823	59,292
"	80.00 %	1:1			9,621	9,621	19,242
"	"	2:1			14,536	7,268	21,804
"	"	3:1			19,452	6,484	25,936
"	"	4:1			24,364	6,091	30,455
"	"	5:1			29,280	5,856	35,136
"	"	6:1			34,188	5,698	39,886

Formula :  $m' = \frac{\text{Sq}\{c(a/2) * \text{Sqrt}[(r+1) * PQ] - c(1-b) * \text{Sqrt}[r * P1Q1 + P2Q2]\}}{(r * \text{Sq}[P2 - P1])}$   
 $m = .25m' * \text{Sq}\{1 + \text{Sqrt}[1 + 2 * (r+1) / (m' * r * \text{Abs}[P2 - P1])]\}$

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